



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-1194; Directorate Identifier 2011-NE-36-AD]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Pratt & Whitney PW4050, PW4052, PW4056, PW4056(-3), PW4156, PW4060, PW4060(-3), PW4060A, PW4152, PW4152(-3), PW4156A, PW4158, PW4158(-3), PW4460, PW4460(-3), PW4462, and PW4462(-3) turbofan engines. This proposed AD was prompted by reports of five engine in-flight shutdowns and seven unplanned engine removals. This proposed AD would require inspections, cleaning, and engine modifications to address coking in the No. 4 bearing compartment and oil pressure and scavenge tubes. We are proposing this AD to prevent an engine fire, a fractured fan drive shaft, and damage to the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Stephen Sheely, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7750; fax: 781-238-7199; e-mail: stephen.k.sheely@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-1194; Directorate Identifier 2011-NE-36-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We received reports of five engine in-flight shutdowns and seven unplanned engine removals due to clogging of No. 4 bearing compartment oil pressure and scavenge tubes. Investigation has revealed that following all engine shutdowns, excessive heat is conducting into the No. 4 bearing compartment and into the oil pressure and scavenge tubes that pass through the turbine exhaust case struts. This excessive heat causes oil coking and oil flow restriction in the pressure and scavenge tubes and oil nozzle. This condition, if not corrected, could lead to an engine fire, a fractured fan drive shaft, and damage to the airplane.

Relevant Service Information

We reviewed Pratt & Whitney Alert Service Bulletin (SB) No. PW4ENG-A72-436, Revision 6, dated September 30, 1999. The SB describes procedures for initial and repetitive inspection and cleaning of the No. 4 bearing compartment. We also reviewed Pratt & Whitney SB No. PW4ENG-72-472, Revision 5, dated April 14, 1998, and SB No. PW4ENG-79-76, Revision 4, dated February 14, 2002. The SBs describe procedures for modifications to stop buildup of coking in the No. 4 bearing compartment, and for rerouting of the No. 4 bearing pressure and scavenge tubes. The rerouted tubes are then located below the engine centerline which eliminates the coking problem.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously.

Costs of Compliance

We estimate that this proposed AD would affect 44 Pratt & Whitney PW4050, PW4052, PW4056, PW4056(-3), PW4156, PW4060, PW4060(-3), PW4060A, PW4152, PW4152(-3), PW4156A, PW4158, PW4158(-3), PW4460, PW4460(-3), PW4462, and PW4462(-3) turbofan engines installed on airplanes of U.S. registry. We also estimate that it would take about 8 work-hours per engine to perform an inspection and cleaning of the No. 4 bearing compartment, about 7 work-hours per engine to perform the modification to stop buildup of coking in the No. 4 bearing compartment, and about 33.7 work-hours per engine to perform the rerouting of the No. 4 bearing pressure and scavenge tubes. The average labor rate is \$85 per work-hour. Required parts would cost about \$69,322 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$3,232,306.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Pratt & Whitney: Docket No. FAA-2011-1194; Directorate Identifier 2011-NE-36-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Pratt & Whitney PW4050, PW4052, PW4056, PW4056(-3), PW4156, PW4060, PW4060(-3), PW4060A, PW4152, PW4152(-3), PW4156A, PW4158, PW4158(-3), PW4460, PW4460(-3), PW4462, and PW4462(-3) turbofan engines.

(d) Unsafe Condition

This AD was prompted by reports of five engine in-flight shutdowns and seven unplanned engine removals due to clogging of No. 4 bearing compartment oil pressure and scavenge tubes. We are issuing this AD to prevent an engine fire, a fractured fan drive shaft, and damage to the airplane.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done.

(f) Inspection and Cleaning of No. 4 Bearing Compartment for Coking

(1) Within 1,000 cycles-in-service (CIS) after the effective date of this AD, initially inspect and clean the No. 4 bearing compartment in accordance with Accomplishment Instructions, paragraphs 2.A. through 2.A.(4)(b)3 of Pratt & Whitney Alert Service Bulletin No. PW4ENG-A72-436, Revision 6, dated September 30, 1999.

(2) Thereafter, within every additional 1,000 CIS, perform the inspection and cleaning specified in paragraph (f)(1) of this AD.

(g) Modification to Stop Buildup of Coking in the No. 4 Bearing Compartment

(1) At the next engine visit to a maintenance facility that is capable of performing the following on-wing method or in-shop method of modification to the No. 4 bearing compartment, but not to exceed 5 years after the effective date of this AD, do the following:

- (i) Replace the No. 4 bearing packing transfer tube assembly;
- (ii) Replace the No. 4 bearing internal scavenge tube assembly;
- (iii) Remove the No. 4 bearing shield, and the No. 4 bearing shield option; and
- (iv) Install new No. 4 bearing shield options.

(2) For doing the on-wing method of the modification, do the work in accordance with Accomplishment Instructions, Paragraphs 2.A. through 2.A.(9)(a)3d of Pratt & Whitney Service Bulletin (SB) No. PW4ENG-72-472, Revision 5, dated April 14, 1998.

(3) For doing the in-shop method of the modification, do the work in accordance with Paragraphs 2.B. through 2.B.(2)(f)2d of Pratt & Whitney SB No. PW4ENG-72-472, Revision 5, dated April 14, 1998.

(h) Rerouting of the No. 4 Bearing Pressure and Scavenge Tubes

(1) At the next shop visit at which the engine is sufficiently disassembled to perform the rerouting, but not to exceed 5 years after the effective date of this AD, do the following:

- (i) Modify the turbine exhaust case to relocate the No. 4 bearing pressure and scavenge tube ports;
- (ii) Replace the internal No. 4 bearing pressure and scavenge tubes;
- (iii) Modify or replace the turbine case cooling brackets to support the new No. 4 bearing pressure and scavenge tubes;

(iv) Replace the turbine case manifolds as necessary; and

(v) Install the new brackets and clamps to support the new routing configuration.

(2) Do the work specified in paragraph (h) of this AD in accordance with Accomplishment Instructions paragraph 2 of Pratt & Whitney SB No. PW4ENG-79-76, Revision 4, dated February 14, 2002.

(i) Terminating Action to the Repetitive Inspections and Cleaning

Performing the modifications specified in both paragraphs (g) and (h), of this AD is terminating action to the repetitive inspections and cleanings specified in paragraph (f)(2) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(k) Related Information

(1) For more information about this AD, contact Stephen Sheely, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7750; fax: 781-238-7199; e-mail: stephen.k.sheely@faa.gov.

(2) For service information identified in this AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone: 860-565-8770; fax: 860-565-4503. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on November 15, 2011.

Peter A. White,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

[FR Doc. 2011-30138 Filed 11/22/2011 at 8:45 am; Publication Date: 11/23/2011]